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09/814,071	03/22/2001	Yuichiro Sugimoto	826.1709	2514

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EXAMINER

PEREZ DAPLE, AARON C

ART UNIT PAPER NUMBER

2121

DATE MAILED: 04/05/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

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**Office Action Summary**

Application No.

09/814,071

Applicant(s)

SUGIMOTO ET AL.

Examiner

Aaron Perez-Daple

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. This Action is in response to Amendment filed 1/28/04, which has been fully considered.
2. Amended claims 1-12 are presented for Examination.
3. This Action is made FINAL.

### ***Response to Arguments***

#### **112 Rejections**

4. The rejections of claims 1, 3-5 and 7-12 under 35 U.S.C. 112, second paragraph are hereby withdrawn in view of the Amendment.
5. The rejection of claims 2 and 6 under 35 U.S.C. 112, second paragraph, is hereby maintained. Although Applicant has amended claims 2 and 6 with the intent of overcoming the original 112 rejection, new issues have been raised. Specifically, it is unclear to the Examiner whether the limitation "a changed base time name" implies that the name itself is changed or merely that the base time name indicates (or "points to") a changed base time (i.e. the base time indicated by the base time name is changed, but the name itself remains the same). For the purpose of applying prior art, the Examiner finds that either interpretation meets the limitation of the claim.

#### **Prior Art Rejections**

6. Applicant's arguments filed 1/28/04 have been fully considered but they are not persuasive.

7. With respect to the rejection of claims 1, 5, 9 and 11 under 35 U.S.C. 102 as anticipated by Tindell, Applicant asserts that Tindell fails to teach an offset of a schedule from a base time. However, Applicant acknowledges [fourth paragraph, pg. 9] that Tindell teaches offset of a transaction from a start time. The Examiner interprets that “a transaction” which Tindell further defines as “a collection of related tasks [first paragraph, Section 2]” is equivalent to “a schedule” of the present invention. The Examiner further interprets that “a start time” of Tindell is equivalent to “a base time” of the present invention. Although obvious to one of ordinary skill in the art, Tindell does not explicitly teach a base time (e.g. start time) having a base time name and a schedule managing apparatus managing execution of one or more schedules using one or more base time names. This is a new claim limitation which is taught by the George reference, as detailed below.
8. With respect to the rejection of claims 3, 7, 10 and 12 under 35 U.S.C. 102 as anticipated by Palencia, Applicant asserts that Palencia fails to teach the offset of a schedule (transaction) from an end time of another schedule. The Examiner respectfully disagrees. In the cited passage [Section 1, “Tindell developed in...than the task periods.”], Palencia clearly discloses that a transaction (schedule) may be released at an offset from a trigger event. Palencia further elaborates that this trigger event *may be the end of a previous task* (e.g. a trigger event is released when a previous task completes its execution). Therefore, Palencia teaches all the limitations of claims 3, 7, 10 and 12 and the rejection under 35 U.S.C. 102 is properly maintained.

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9. With respect to the rejection of claims 2 and 6 under 35 U.S.C. 103 as obvious over Tindell in view of George, Applicant asserts that George fails to teach changing data that causes all the tasks having that data to also be changed. The Examiner respectfully disagrees. George teaches starting a task control block (TCB) upon the expiration of timer. George further teaches that the timers may be set, cancelled or reset prior to expiring. In particular *resetting* of the timers is interpreted by the Examiner to be changing a base time (here, the "base time" is the time stored in the timer). It is clear that the group of tasks included in the TCB will all be offset according to the change in the start time (base time). Therefore, George teaches this limitation of claims 2 and 6, which are properly rejected under 35 U.S.C. 103.
10. With respect to the rejection of claims 4 and 8 under 35 U.S.C. 103 as obvious over Palencia in view of George, Applicant asserts that the claims fail to teach all the limitations for the same reasons as claims 2 and 6. The rejection is maintained for the same reasons as claims 2 and 6, above.

***Claim Rejections - 35 USC § 112***

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:
- The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
12. **Claims 2 and 6** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Although Applicant has amended claims 2 and 6 with the intent of overcoming the original 112 rejection, new issues have been raised.

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Specifically, it is unclear to the Examiner whether the limitation “a changed base time name” implies that the name itself is changed or merely that the base time name indicates (or “points to”) a changed base time (i.e. the base time indicated by the base time name is changed, but the name itself remains the same). For the purpose of applying prior art, the Examiner finds that either interpretation meets the limitation of the claim.

Furthermore, it appears to the Examiner that the “changed base time name” does not *use* the changed base time, but rather indicates (or “points to”) the changed base time.

***Claim Rejections - 35 USC § 102***

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. **Claims 3, 7, 10 and 12** are rejected under 35 U.S.C. 102(b) as being anticipated by Palencia et al (Palencia, J.C.; Gonzalez Harbour M., “Schedulability analysis for tasks with static and dynamic offsets,” Real-Time Systems Symposium, 1998. Proceedings., The 19th IEEE , 2-4 Dec. 1998 , pgs. 26 -37.) (hereinafter Palencia).

Palencia discloses a scheduler operating in either a single processor environment or in a multiprocessor and distributed environment [Section 4, “In a multiprocessor and distributed system...worst-case analysis.”]. The Office notes that a processor [fig. 3] inherently includes a storage unit for storing data and algorithms. Furthermore, a control

unit is inherent to the processor. In addition, a processor inherently includes a setting unit, for setting or changing values stored in the storage unit.

15. As for claim 3, Palencia discloses:

a schedule execution managing apparatus managing execution of one or more schedules, comprising:

a planned start time setting unit [setting unit, inherent to processor] setting a planned start time of a first schedule using an end time of a second schedule, and an offset from the end time, wherein the first schedule having a dependency on the second schedule [Section 1, "Tindell developed in...than the task periods."; Section 2, "The real-time system...that we will call a job."];

a planned start time storing unit storing the set planned start time [storage unit, inherent to processor]; and

a schedule execution controlling unit controlling an execution start of the schedule by referencing contents stored in said planned start time storing unit [control unit, inherent to processor].

16. Claims 7, 10 and 12 are subject to the same limitations as claim 3. Therefore, the same rejections apply (see 102 rejection of claim 3 above).

### ***Claim Rejections - 35 USC § 103***

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. **Claims 1, 2, 5, 6, 9 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Tindell in view of George et al (US 5,768,572) (hereinafter George).

Tindell discloses a scheduler operating in a single processor environment [Section 2, "Finally, we mention...single processor systems only...."]. The Office notes that a processor inherently includes a storage unit for storing data and algorithms. Furthermore, a control unit is inherent to the processor. In addition, a processor inherently includes a setting unit, for setting or changing values stored in the storage unit.

19. As for claim 1, Tindell discloses a schedule execution managing apparatus managing execution of one or more schedules, comprising:

a planned start time setting unit setting a planned start time of a schedule using a base time and an offset from the base time [Section 2, "The computational model assumed...period of the transaction."];

a planned start time storing unit storing the set planned start time [storage unit, inherent to processor]; and

a schedule execution controlling unit controlling an execution start of the schedule by referencing contents stored in said planned start time storing unit [control unit, inherent to processor].

Although obvious to one of ordinary skill in the art, Tindell does not specifically disclose a base time having a base time name and said schedule execution managing apparatus managing execution of one or more schedules using one or more base time names. George discloses a base time having a base time name and said schedule



execution managing apparatus managing execution of one or more schedule using one or more base time names [col. 6, lines 8-46, "The present invention...timing wheel slot."; col. 8, "The flow diagram...the timing wheel slot expired."]. Specifically, George teaches starting task control blocks (TCB's) upon the expiration of respective timers. George further teaches that the timers may be set, cancelled or reset prior to expiring. In particular *resetting* of the timers is interpreted by the Examiner to be changing a base time (here, the "base time" is the time stored in the timer). Furthermore, George teaches maintaining pointers to the stored TCB's. The Examiner interprets that the pointers themselves may be considered "names." However, it is further clear that the timers themselves have identifiers (names) within the schedule execution managing apparatus to control selective resetting of the timers. Therefore, George teaches this limitation of the claims. The Examiner notes that Applicant has not further limited the type or use of the recited "names" (specifically, the claims do not include a display or interface of any kind).

It would have been obvious to one of ordinary skill in the art to modify Tindell by using a base time name and said schedule execution managing apparatus managing execution of one or more schedule using one or more base time names in order to reset the time for execution of a schedule, as taught by George [cols. 1-2, "The introduction of the HPR...the next periodic acknowledgement."].

20. Claims 5, 9 and 11 are subject to the same limitations as claim 1. Therefore, the same rejections apply (see 102 rejection of claim 1 above).

21. As per claim 2, Tindell does not specifically disclose changing a planned start time of a first schedule using a changed base time name and rewriting the planned start time in the planned start time storing unit. However, George discloses a schedule execution managing apparatus similar to that of claim 1, further comprising:

a planned start time changing unit [inherent to processor] changing a planned start time of a schedule which uses a changed base time name using the changed base time and the offset, when the base time is changed, and rewriting the planned start time stored in said planned start time storing unit [col. 8, "The flow diagram...the timing wheel slot expired."].

It would have been obvious to one of ordinary skill in the art to modify the teachings of Tindell to include changing a planned start time of a schedule using a changed base time and an offset from the base time in order to reset a timer before it expires, as taught by George [cols. 1-2, "The introduction of the HPR...the next periodic acknowledgement."]. See also response to arguments, above.

22. As per claim 6, Tindell does not specifically disclose resetting a planned start time of a schedule using a changed base time nor storing the reset planned start time. However, George discloses a schedule execution manager method similar to that of claim 5, further comprising:

resetting a planned start time of a schedule which uses a changed base time name using the changed base time and the offset, when the base time is changed [col. 8, "The flow diagram...the timing wheel slot expired."];

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storing the reset planned start time [col. 8, "The flow diagram...the timing wheel slot expired."]; and

controlling an execution start of the schedule by referencing the stored planned start time [col. 8, "The flow diagram...the timing wheel slot expired."].

It would have been obvious to one of ordinary skill in the art to modify the teaching of Tindell by resetting a planned start time of a schedule using a changed base time in order to reset a timer before it expires, as taught by George [cols. 1-2, "The introduction of the HPR...the next periodic acknowledgement."]. See also response to arguments, above.

23. **Claims 4 and 8** are rejected under 35 U.S.C. 103(a) as being obvious over Palencia in view of George.

As per claim 4, Palencia does not specifically disclose changing a planned start time of a first schedule based on a changed end time of a second schedule. However, George discloses a schedule execution managing apparatus similar to that of claim 3, further comprising:

a planned start time changing unit [inherent to processor] changing the planned start time of the first schedule having the dependency on the second schedule using the changed end time and the offset, when the end time of the second schedule is changed, and rewriting the planned start time stored in said planned start time storing unit [col. 8, "The flow diagram...the timing wheel slot expired."].

It would have been obvious to one of ordinary skill in the art to modify the teaching of Palencia by changing the planned start time of a first schedule based on a changed end

time of a second schedule in order to reset a timer for a task, such as retransmission of data, as taught by George [cols. 1-2, "The introduction of the HPR...the next periodic acknowledgement."]. See also response to arguments, above.

24. As per claim 8, Palencia does not specifically disclose resetting a planned start time of a schedule using a changed base time nor storing the reset planned start time.

However, George discloses a schedule execution manager method similar to that of claim 7, further comprising:

resetting the planned start time of the first schedule having the dependency on the second schedule using the end time after change and the offset from the end time, when the end time of the second schedule is changed [col. 8, "The flow diagram...the timing wheel slot expired."];

storing the reset planned start time [col. 8, "The flow diagram...the timing wheel slot expired."]; and

controlling an execution start of the first schedule by referencing the stored planned start time [col. 8, "The flow diagram...the timing wheel slot expired."].

It would have been obvious to one of ordinary skill in the art to modify the teaching of Palencia by resetting a planned start time of a first schedule using a changed end time of a second schedule in order to reset a timer for a task, such as retransmission of data, as taught by George [cols. 1-2, "The introduction of the HPR...the next periodic acknowledgement."]. See also response to arguments, above.

*Conclusion*

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 5,636,124, note Fig. 5; US 5,951,691, note col. 6; US 6,081,090, note col. 4; US 5,487,170, note Fig. 7; US 5,555,179, note teaches wait time (offset); US 5,251,122, note cols. 7-8; US 6,304,891 B1, note periodic scheduling with timeshare model; US 5,177,684, note train schedule.

26. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron Perez-Daple whose telephone number is 703-305-4897. The examiner can normally be reached on 9am - 6pm.

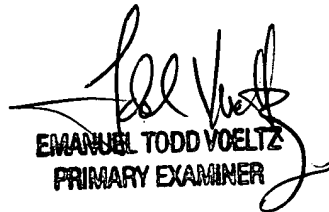
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anil Khatri can be reached on 703-305-0282. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 4/2/04

Aaron Perez-Daple

  
EMANUEL TODD VOELTZ  
PRIMARY EXAMINER